Amendments to the Claims

1 – 7. (Canceled)

8. (Previously presented) An assembly, comprising:

a first plurality of optical devices formed from a first substrate and distributed in a plane of said first substrate; and

a second plurality of optical devices formed from a second substrate and distributed in a plane of said second substrate;

wherein said first and second substrates are bonded together and allow a beam of light to be transmitted through optical elements on both of said substrates; and

wherein each of said optical devices formed on one of said first and second substrates comprises:

a deformable mechanical element extending in a direction parallel to a principal surface of said one substrate;

an optical element supported on said mechanical element and providing at least partial transmission therethrough of light incident thereupon into any of plurality of directions extending closer to a normal to said principal surface than parallel to said principal surface; and

an electrical control element controllably deforming said mechanical element and thereby selecting one of said plurality of directions.

9. (Original) The assembly of Claim 8, wherein a position of a mechanical element on said first substrate through which said beam passes determines which of the mechanical elements on said second substrate said beam passes.

10. (Original) An optical switch, comprising:

a first substrate having formed therein a first plurality of optical switching elements; and

a second substrate having formed therein a second plurality of said optical switch elements optically associated with said first plurality of optical switching elements;

wherein each said optical switching element comprises

a deformable mechanical element extending in a direction parallel to a principal surface of a corresponding one of said substrates and deformable in a direction perpendicular to said principal surface,

an optical element supported on said mechanical element and providing at least partial transmission therethrough of light incident thereupon into any of plurality of directions extending closer to a normal to said principal surface than parallel to said principal surface, and

an electrical control element controllably deforming said mechanical element and thereby selecting one of said plurality of directions.

11. (Previously presented) The optical switch of Claim 10, wherein said two substrates are bonded together respectively along said principal surfaces thereof with said switching elements of said first substrate face said switching elements of said second substrate.

12. (Original) The optical switch of Claim 10, wherein said each mechanical element includes a plate supporting said optical element and being rotatably supported by two torsion beams.

13. (Original) The optical switch of Claim 10, wherein said optical elements are refractive.

14. (Original) The optical switch of Claim 10, wherein said optical elements are diffractive.

15. (Previously presented) A method of manufacturing an optical switch, comprising the steps of:

a first step of fabricating in a first substrate an array of a plurality of optical switching elements;

a second step of fabricating in a second substrate an array of a plurality of optical switching elements; and

bonding together said substrates so that the switching elements of said two substrates face each other;

wherein each of said optical switching elements includes

a deformable mechanical element,

an electrical control element controlling an angular orientation of said mechanical element, and

a transmissive optical element supported on said mechanical element and allowing passage of light between said two arrays of switching elements.

16. (Original) The method of Claim 15, wherein said bonding step is performed after said two fabricating steps.

17. (Previously presented) A method of manufacturing an optical switch, comprising the steps of:

a first step of fabricating in a first substrate an array of a plurality of optical switching elements;

a second step of fabricating in a second substrate an array of a plurality of optical switching elements; and

bonding together said substrates so that the switching elements of said two substrates face each other;

wherein each of said optical switching elements includes

a deformable mechanical element,

an electrical control element controlling an angular orientation of said mechanical element, and

a transmissive optical element supported on said mechanical element and allowing passage of light between said two arrays of switching elements, wherein said bonding step is performed between said two fabricating steps; and

wherein said bonding step is performed between said two fabricating steps.

18. (Currently amended) The method of Claim 15, wherein said two fabricating steps include micro electromechanical fabricating techniques.

19. (Original) The method of Claim 18, wherein said techniques include lithography, etching, and at least one of sputtering and chemical vapor deposition.

20 – 22. (Canceled)

23. (Currently amended) An assembly of a plurality of individually adjustable optical switching devices formed from a first substrate and a second substrate, each substrate having a respective principal surface and wherein said optical switching devices are distributed two dimensionally in said respective principal surfaces, comprising:

a first plurality of [[the]] said individually adjustable optical switching devices ~~of Claim 1~~ formed from said [[a]] first ~~one of said substrates~~ substrate and distributed in a plane of said first substrate; and

a second plurality of [[the]] said individually adjustable optical switching devices ~~of~~

~~Claim 1~~ formed from said [[a]] second ~~one of said substrates~~ substrate and distributed in a plane of said second substrate;

wherein said first and second substrates are bonded together and allow a beam of light to be transmitted through optical elements on both of said substrates; and

wherein each of said individually adjustable optical switching devices comprises

a deformable mechanical element extending in a direction parallel to said respective principal surface,

an optical element supported on said mechanical element and providing at least partial transmission therethrough of light incident thereupon into any of plurality of directions extending closer to a normal to said respective principal surface than parallel to said respective principal surface, and

an electrical control element controllably deforming said mechanical element and thereby selecting one of said plurality of directions.

24. (Previously presented) The assembly of Claim 8, wherein said two substrates are bonded together respectively along said principal surfaces thereof.

25. (Previously presented) The method of Claim 15, wherein said first and second substrates are bonded together respectively along said principal surfaces thereof.

26. (Previously presented) An optical switch, comprising:

a first substrate having formed within a first principal surface thereof a first array of at least partially transmissive first optical elements which are individually tiltable about respective first axes extending parallel to said first principal surface; and

a second substrate having formed within a second principal surface thereof a second array of at least partially transmissive second optical elements which are individually tiltable about respective second axes extending parallel to said second principal surface;

wherein optical paths are selectively formed between said first and second optical elements by tilting selected ones of said first and second optical elements.

27. (Previously presented) The optical switch of Claim 26, wherein said first and second substrates are juxtaposed with said first and second principal surfaces facing each other.

28. (Previously presented) The optical switch of Claim 26, wherein said first and second substrates are bonded together along said first and second principal surfaces.

29. (Previously presented) The optical switch of Claim 26, further comprising control elements respectively associated with individual ones of said first and second optical elements to effect tilting thereof.

30. (Previously presented) The optical switch of Claim 26, wherein said first and second arrays are both two-dimensional arrays.